Complete Summary

GUIDELINE TITLE

HealthPartners Dental Group and Clinics third molar guideline.

BIBLIOGRAPHIC SOURCE(S)

HealthPartners Dental Group and Clinics third molar guideline. Minneapolis (MN): HealthPartners; 2008 Dec 29. 16 p. [89 references]

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Pathologic, symptomatic, or asymptomatic third molars

GUIDELINE CATEGORY

Diagnosis
Evaluation
Treatment

CLINICAL SPECIALTY

Dentistry

INTENDED USERS

Dentists

GUIDELINE OBJECTIVE(S)

- To provide the HealthPartners Dental Group (HPDG) dentist staff with diagnostic criteria and treatment options for third molars, which will result in better, more uniform care for their patient populations
- To identify specific interventions and therapies in treating third molars
- To provide guidance for referrals related to third molars

TARGET POPULATION

Patients in the HealthPartners Dental Groups with pathologic, symptomatic, or asymptomatic third molars

INTERVENTIONS AND PRACTICES CONSIDERED

1. Evaluation of patients for extraction or non-extraction of third molars based on defined criteria
2. Monitoring of asymptomatic patients over 30 years of age by annual radiograph and clinical examination
3. Referral of asymptomatic patients 14 to 30 years of age to oral surgeon for consultation
4. Indications and contraindications for removal of:
    - Erupted third molars
    - Partially erupted third molars
    - Unerupted third molars

MAJOR OUTCOMES CONSIDERED

- Variability in how third molars are treated
- Patient outcomes

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

An online search from 1997-present was conducted using MedLine, The Cochrane Collaboration, and the white paper from the American Association of Oral and Maxillofacial Surgeons (AAOMS). Articles on third molars, extractions, and indications/contraindications for extraction were included.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Literature was reviewed and discussed by a committee composed of general dentists and one oral surgeon.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not stated

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Treatment Criteria for Removal of Third Molars: Erupted Third Molars

Definition

An erupted third molar is one so positioned that the entire clinical crown is visible.

Introduction

Based upon a review of the current literature on the topic of third molar extractions, there is nearly unanimous agreement regarding treatment for fully erupted third molars. The following indications and contraindications reflect the current rationale for removal of erupted third molars. Final determinants for treatment, however, will always be the practitioner's clinical judgment and the patient's informed consent.

Indications for Removal*

1. Non-restorable, carious tooth.
2. Clinical findings of pulp exposure by dental caries.
3. Clinical findings of fractured tooth.
4. Internal or external resorption of tooth or of adjacent tooth.
5. Non-treatable pulpal or periapical lesion.
6. Acute and/or chronic infection (abscess or cellulites).
7. To limit or manage progression of periodontal disease.
8. Tooth shape, size, or position which prevents normal function in the arch.
9. Hyper-erupted or ectopic tooth causing occlusal or soft tissue interference.
10. To facilitate prosthetic rehabilitation.
11. To facilitate orthodontic tooth movement and stability.
12. Tooth in the line of jaw fracture complicating fracture management.
13. Tooth involved in resection of pathologic lesion.
14. Tooth interfering with orthognathic or reconstructive surgery.
15. Prophylactic removal, when indicated, for patients with medical or surgical conditions (e.g., organ transplants, alloplastic implants, chemotherapy, radiation therapy).
16. Patients informed refusal of non-surgical treatment options.
17. No opposing tooth and not needed for prosthetic rehabilitation.

Contraindications for Removal*

1. Patient's informed refusal of surgical treatment options.
2. Asymptomatic teeth without indications for removal.
3. Medical complications.
4. Age of the patient (see flow chart in the original guideline).
5. Postradiation patients.
6. Possibility of damage to important adjacent structures.
7. Bisphosphonate therapy (current or history of).
8. Post head and neck radiation therapy.

*__Note__: Indications and contraindications are relative, not absolute.

Treatment Criteria for Removal of Third Molars: Partially Erupted Third Molars

Definition

A partially erupted tooth is one so positioned that only a portion of the clinical crown is visible.

Introduction

Based upon a review of the current literature, the following indications and contraindications reflect the current rationale for removal of partially erupted third molars. Final determinants for treatment will always be the practitioner's clinical judgment and the patient's informed consent.

Indications for Removal*

1. Non-restorable, carious tooth.
2. History of pericoronitis, or initial incident of pericoronitis with poor prognosis for full eruption or for oral hygiene maintenance.
3. Non-treatable pulpal or periapical lesion.
4. Acute or chronic infection.
5. To facilitate prosthetic rehabilitation.
6. To limit or manage progression of periodontal disease.
7. Ectopic position and/or tooth shape or size which prevents normal function within the dental arch.
8. Tooth in line of jaw fracture, complicating fracture management.
9. Tooth involved in resection of pathologic lesion.
10. Tooth interfering with orthognathic or reconstructive surgery.
11. Prophylactic removal, when indicated, for patients with certain medical or surgical conditions (e.g., organ transplants, alloplastic implants, chemotherapy, and radiation therapy).
12. Pathology associated with tooth follicle (e.g., cysts and tumors).
13. Clinical findings of fractured tooth or adjacent tooth.
14. Internal or external resorption of tooth or adjacent tooth.
15. Patients informed refusal of non-surgical treatment options.
16. Need for donor transplant.
17. Caries on distal of second molar.

Contraindications for Removal*

1. Patient's informed refusal of surgical treatment options.
2. Asymptomatic with no pathology.
3. Medical complications.
4. Age of the patient (see flow chart in original guideline).
5. Post-radiation patients.
6. Possibility of damage to important adjacent structures.
7. Asymptomatic with good prognosis for future full eruption.
8. First occurrence of pericoronitis, with good prognosis for future maintenance.
9. Bisphosphonate therapy (current or history of).
10. Post head and neck radiation therapy.

*__Note__: Indications and contraindications are relative, not absolute.

Definition

An unerupted third molar is one that has not penetrated through the bone and/or soft tissue and entered the oral cavity by an age when such eruption is expected.

Introduction

The indications for removal of unerupted third molars when associated with pathology have been clearly established. Absolute indications and contraindications for the removal of unerupted asymptomatic third molars cannot be established because no long term studies exist which validate the benefit to the patient either of early removal or deliberate retention of these teeth.

*__Note__: Indications and contraindications are relative, not absolute.

Indications for Removal*

1. Pathology associated with tooth follicle (e.g., cyst, tumor).
2. To facilitate the management of periodontal disease.
3. Resorption of adjacent tooth.
4. To facilitate orthodontic treatment.
5. Unerupted molar under a prosthetic appliance.
6. Tooth in the line of a jaw fracture.
7. Tooth involved in the resection of pathologic lesion.
8. Tooth interfering with orthognathic or reconstructive surgery.
9. Prophylactic tooth removal, when indicated, for patients with medical or surgical conditions or treatments (e.g., organ transplants, alloplastic implants, chemotherapy, radiation therapy).
10. Internal or external resorption of tooth.
11. Need for donor transplant.

Contraindications for Removal*

1. Patient refuses treatment.
2. Compromised medical condition.
3. Age of patient (see flow chart).
4. Increased probability of damage to important adjacent structures.
5. Bisphosphonate therapy (current or history of).
6. Post head and neck radiation therapy.

*__Note__: Indications and contraindications are relative, not absolute.

Suggestions to Clinicians

In summary, the following suggestions for treatment, referral and monitoring asymptomatic impacted third molars are provided:

1. If the patient is over 30 years of age, third molars should be monitored. Suggested monitoring regimen is an annual radiograph and clinical examination.

2. If the patient is between 14 and 30 years of age and root formation is at least 1/2 to 2/3 complete, the examining dentist should review treatment options including risks and benefits. Referral to an oral and maxillofacial surgeon for consultation can be made as indicated.
3. If there are multiple third molars present, the treating general dentist or oral surgeon will consult on the advisability of removal of all third molars simultaneously.

CLINICAL ALGORITHM(S)

An algorithm for treatment options for third molars is provided in the original guideline document.

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of evidence supporting the recommendations is not specifically stated.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Benefits of Extraction

- Relation to age: Studies have shown that increased numbers of complications occur with removal of impacted lower third molars in older patients. These complications include: increased pain, swelling, trismus, bleeding, fractured roots, lingual and inferior alveolar nerve injury, localized osteitis, and prolongs healing. Current literature indicates that the ideal age for impacted third molar removal with minimal complications is between the ages of 14 and 30. Based upon root formation, the ideal time for removal of impacted third molars is when root formation is between 1/3 and 2/3 complete.
- Relation to periodontal status: Patients with impacted mandibular third molars often have deep periodontal pockets on the distal aspect of the second molar. Early removal of the third molar can help prevent this bone loss, and increase likelihood of bony healing in the area previously occupied by the crown of the third molar.

Benefit of Nonextraction

- Prosthetic potential: a retained third molar could serve as a transplant tooth in the event of adjacent tooth loss, or as a bridge abutment.
- Avoid unnecessary procedure: Pathological changes related to long term impaction of third molars are not common; many people can live their entire life without any complication form an impacted third molar.
- Less morbidity, less missed work. Many studies cite estimates of the amount of discomfort and decreased productivity following elective third molar extraction.

- Reduced cost: Both patients and insurers save cost of surgery if it can be avoided without detriment to the patient.

POTENTIAL HARMS

Risks of Extraction

- Sensory nerve alterations: Incidence of sensory nerve (lingual or inferior alveolar) damage following third molar removal ranges from less than 1% to 6%.
- Localized osteitis: Localized osteitis will occur in about 1% to 5% of patients regardless of the skill of the surgeon or the surgical protocol.
- Additional risks include: Postoperative infection, trismus, hemorrhage, dentoalveolar fractures, displacement of tooth, sinus perforation, adjacent tooth fractures, damage to adjacent restorations, jaw fracture.

Risks of Nonextraction

- Resorption of second molar: Clinical and radiographic studies indicate a range of resorption of adjacent second molars from 3.5% to 4.7%.
- Development of cyst, tumor, or infection: studies have shown that 12% of unerupted teeth had associated pathology and that there was no increase in pathology with increased age of the patient. A cyst has been defined in the literature as a follicular space ranging from 2.0 mm to greater than 5.0 mm.
- Crowding of dentition: Removal of third molars to prevent or reduce anterior arch crowding is a controversial practice. Some authors state that removal of third molars provides no benefit with respect to crowding, while others found less crowding when third molars were removed. Since this variation exists, some orthodontists will request removal and some will not.
- Recurrent pericoronitis
- Periodontal disease
- Dental caries

CONTRAINDICATIONS

CONTRAINDICATIONS

See "Major Recommendations" field for relative contraindications for removal of erupted, partially erupted, and unerupted third molars.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

IMPLEMENTATION TOOLS

Clinical Algorithm

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

HealthPartners Dental Group and Clinics third molar guideline. Minneapolis (MN): HealthPartners; 2008 Dec 29. 16 p. [89 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2008 Dec 29

GUIDELINE DEVELOPER(S)

HealthPartners Dental Group - Professional Association

SOURCE(S) OF FUNDING

HealthPartners Dental Group

GUIDELINE COMMITTEE

Not stated

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Not stated

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: None available

Print copies: Available from HealthPartners, 8170 33rd Avenue South, P.O. Box 1309, Minneapolis, MN 55440-1309; Phone: (952) 883-5151; Web site: http://www.healthpartners.com

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI Institute on August 19, 2009. The information was verified by the guideline developer on August 24, 2009.

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